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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,118	10/31/2003	Kulbinder K. Banger	35089US1	8939
116	7590	01/19/2005	EXAMINER	
PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108			NAZARIO GONZALEZ, PORFIRIO	
			ART UNIT	PAPER NUMBER
			1621	

DATE MAILED: 01/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/698,118	Applicant(s) BANGER ET AL.	
	Examiner Porfirio Nazario-Gonzalez	Art Unit 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8, 10-15, 28, 38-40 and 45-58 is/are rejected.
- 7) ☒ Claim(s) 6,9,16-27,29-37 and 41-44 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

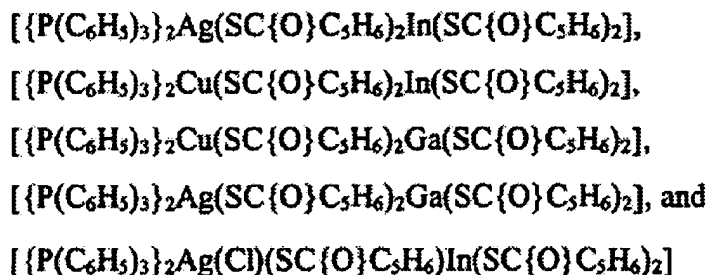
1. Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The compounds below, which are listed in claim 1, are incorrect. Please note that the group "C₅H₆" is not correct. It appears that the group "C₆H₅" was intended. Please clarify. Also note that the specification shows the same problem.



4. Claims 47-51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The definitions of variables M' and M'' in the formula $[(L)_nM'(ER)_2M''(ER)_2]$ appears to be incorrect. M' is the Group I-B element and M'' is the III-A element. Please correct.
5. Claim 28 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as

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the invention. The compound "CuGaS" appears to be incorrect. It appears that CuGaS₂ was intended. Please correct.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-5, 7, 8, 10-15, 38-40, 47-51, 57 and 58 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Banger et al., Abstract, 222nd ACS National Meeting, Chicago, IL, United States, August 26-30, 2001. The abstract indicates the synthesis of single source precursors of the formula $[\{ER_3\}_2Cu(YR')_2In(YR')_2]$ where E is P, As, or Sb; Y is S or Se; R and R' are alkyl or aryl. The abstract also indicates that the precursors were utilized for the metalloorganic chemical vapor deposition (MOCVD) of CuInS₂ or CuInSe₂. Since the subject matter described in the abstract was presented in a public meeting one year prior to the effective filing date of the instant application, therefore said subject matter is prior art under 35 USC 102(b).

8. Claims 1 and 16 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Chhipa et al., Indian Journal of Chemistry, Vol. 28A, No. 5, pp 396-399 (May 1989). The Chhipa et al. reference discloses alkoxocooper(II) tetraisopropoxyaluminates of the formula $(RO)Cu\{Al(OPr^i)_4\}$ where R is me, Et, Prⁿ, Buⁿ, Bu^s, Bu^t, Am^t. See experimental section.

9. Claims 1-5, 7, 8, 10-15, 38-40, and 45-58 rejected under 35 U.S.C. 102(b) as being clearly anticipated by Banker et al., Applied Organometallic Chemistry, Vol. 16, No. 11, pp.

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617-627 (published online October 8, 2002, see copy of Webpage). The article discloses the synthesis of single-source precursors (SSPs), useful in the development of polycrystalline thin-film solar cells, and their use in the formation of thin-film PVs by spray chemical deposition process. See Scheme 1 and Table 1 on pages 619 and 620 respectively.

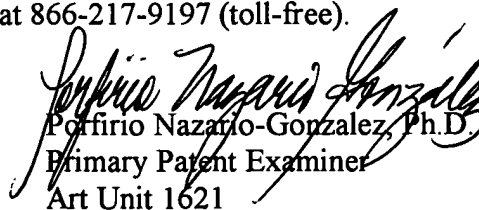
Allowable Subject Matter

10. Claims 6, 9, 16-27, 29-37 and 41-44 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Porfirio Nazario-Gonzalez whose telephone number is 571-272-0641. The examiner can normally be reached on Mon.-Fri. (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Porfirio Nazario-Gonzalez, Ph.D.
Primary Patent Examiner
Art Unit 1621

PNG
December 1, 2005